INDEX TO AUTHORS

A

Adler, Julius. See *Friedberg, Adler, and Lardy*, 943

—. See *Lardy and Adler*, 933

Agranoff, Bernard W., and **Brady, Roscoe O.** Purification and properties of calf liver ribokinase, 221

Ahrens, Edward H., Jr., and **Borgström, Bengt.** Exchange of free fatty acids and glyceride fatty acids during fat digestion in the human intestine, 665

Alivisatos, S. G. A., and **Woolley, D. W.** Solubilization and purification of the diphosphopyridine nucleotidase from beef spleen, 823

Allen, Frank Worthington. See *Crestfield and Allen*, 103

Arata, Dorothy, Svenneby, Gyda, Williams, J. N., Jr., and **Elvehjem, C. A.** Metabolic factors and the development of fatty livers in partial threonine deficiency, 327

Atlas, Sheldon M., and **Farber, Elliott.** On the molecular weight of cytochrome *c* from mammalian heart muscle, 31

Axelrod, Leonard R., Miller, Leon L., and **Herling, Friederike.** The metabolism of testosterone in the isolated perfused dog liver, 455

B

Bachhawat, Bimal K., Robinson, William G., and **Coon, Minor J.** Enzymatic carboxylation of β-hydroxyisovaleryl coenzyme A, 539

Balis, M. Earl, Brooke, Marcus S., Brown, George Bosworth, and **Magasanik, Boris.** The utilization of purines by purineless mutants of *Aerobacter aerogenes*, 917

Ball, Charles D. See *Byerrum, Dewey, Hamill, and Ball*, 345

Balls, A. K., and **Wood, Henry N.** Acetyl chymotrypsin and its reaction with ethanol, 245

Bandurski, Robert S., and **Lipmann, Fritz.** Studies on an oxalacetic carboxylase from liver mitochondria, 741

Barnes, Frederick W., Jr. See *Hilton, Barnes, and Enns*, 833

Beck, L. W. See *Mattson and Beck*, 735

Beinert, Helmut. See *Hauge, Crane, and Beinert*, 727

Beyer, Klaus F., and **Samuels, Leo T.** Distribution of steroid-3β-ol-dehydrogenase in cellular structures of the adrenal gland, 69

Borgström, Bengt. See *Ahrens and Borgström*, 665

Borries, Eleanor. See *Dietrich and Borries*, 375

Boyer, P. D. See *Koeppe, Boyer, and Stulberg*, 569

Bradley, Louise B. See *Kielley, Kalckar, and Bradley*, 95

Brady, Roscoe O. See *Agranoff and Brady*, 221

Broberg, Patricia L. See *Plaut and Broberg*, 131

Brodie, Arnold F., and **Gray, Clarke T.** Phosphorylation coupled to oxidation in bacterial extracts, 853

Brooke, Marcus S. See *Balis, Brooke, Brown, and Magasanik*, 917

Brown, George Bosworth. See *Balis, Brooke, Brown, and Magasanik*, 917

Brown, James R. See *Radin, Brown, and Lavin*, 977

Brown, R. R., and **Price, J. M.** Quantitative studies on metabolites of tryptophan in the urine of the dog, cat, rat, and man, 985

Bruemmer, Joseph H., and **O'Dell, Boyd L.** Inhibition of color development in the Lowry-Lopez phosphorus method by sulfhydryl compounds and its counteraction by copper, 283

Bryson, Melvin J. See *Paul, Bryson, and Harrington*, 463

XUM

Byerrum, Richard U., Dewey, Lovell J., Hamill, Robert L., and **Ball, Charles D.** The utilization of glycolic acid for methyl group synthesis in tobacco, 345

C

Casarett, L. J. See *Neuman, Morrow, Toribara, Casarett, Mulryan, and Hodge,* 551

Ceithaml, Joseph. See *Westley and Ceithaml,* 139

Chaikoff, I. L. See *Felts, Doell, and Chaikoff,* 473

Ciotti, Margaret M. See *Kaplan, Goldin, Humphreys, Ciotti, and Stolzenbach,* 287

Clegg, R. E., Ericson, A. T., Hein, R. E., McFarland, R. H., and **Leonard, G. W.** An electrophoretic component responsible for calcium binding in the blood sera of chickens, 447

Cohen, Seymour S. See *Green and Cohen,* 557

Cole, R. David, Li, Choh Hao, Harris, J. Ieuan, and **Pon, Ning G.** Corticotropins (ACTH). VIII. The action of pepsin on α-corticotropin and the *C*-terminal amino acid sequence, 903

Coleman, John. See *Edelhoch and Coleman,* 351

Colowick, Sidney P. See *Nikiforuk and Colowick,* 119

Coon, Minor J. See *Bachhawat, Robinson, and Coon,* 539

Cooper, Cecil, and **Lehninger, Albert L.** Oxidative phosphorylation by an enzyme complex from extracts of mitochondria. I. The span β-hydroxybutyrate to oxygen, 489

— and —. III. The span cytochrome *c* to oxygen, 519

Crane, F. L. See *Hauge, Crane, and Beinert,* 727

Crestfield, Arthur M., and **Allen, Frank Worthington.** Studies on the enzymatic liberation of diphosphonucleosides from the ribonucleic acids of yeast, 103

D

Davis, Sidney, and **Simpson, T. H., Jr.** The determination of serum bicarbonate by flame photometry, 885

De Giovanni, Rosalie. See *Zamenhof, Reiner, De Giovanni, and Rich,* 165

De Long, Chester W. See *Stevens, Inamine, and De Long,* 405

Devlin, Thomas M., and **Lehninger, Albert L.** Oxidative phosphorylation by an enzyme complex from extracts of mitochondria. II. The span β-hydroxybutyrate to cytochrome *c,* 507

Dewey, Lovell J. See *Byerrum, Dewey, Hamill, and Ball,* 345

Dien, Lien Tien H. See *Mounter and Dien,* 685

Dietrich, L. S., and **Borries, Eleanor.** Hydroxylamine inhibition of xanthine oxidase activity, 375

— and **Harland, Brenda F.** Evidence indicating a chemical reaction between hydroxylamine and riboflavin, 383

Dittmer, Karl. See *Younathan, Frieden, and Dittmer,* 531

Doell, Ruth G. See *Felts, Doell, and Chaikoff,* 473

Doisy, Edward A. See *Kinsella, Francis, Thayer, and Doisy,* 265

Doudoroff, Michael. See *Palleroni and Doudoroff,* 957

Dunn, Floyd W., Ravel, Joanne M., and **Shive, William.** Inhibition studies with peptides of thienylalanine and phenylalanine, 809

Dunn, Max S. See *Eiduson and Dunn,* 175

E

Edelhoch, Harold, and **Coleman, John.** The kinetics of the enzymatic hydrolysis of ribonucleic acid, 351

Eiduson, Samuel, and **Dunn, Max S.** Utilization of phenylalanine, phenyllactic acid, and phenylpyruvic acid by *Lactobacillus casei,* 175

Elvehjem, C. A. See *Arata, Svenneby, Williams, and Elvehjem,* 327

—. See *Ericson, Harper, Williams, and Elvehjem,* 59

Enns, Theodore. See *Hilton, Barnes, and Enns,* 833

Ericson, A. T. See *Clegg, Ericson, Hein, McFarland, and Leonard,* 447

Ericson, L.-E., and **Harper, A. E.** Effect of diet on the betaine-homocysteine transmethylase activity of rat liver. I. Amino acids and protein, 49

—, —, **Williams, J. N., Jr.,** and **Elvehjem, C. A.** Effect of diet on the betaine-homocysteine transmethylase activity of rat liver. II. Vitamin B_{12}, 59

Eto, W. H. See *Lieberman,* 307

F

Farber, Elliott. See *Atlas and Farber,* 31

Farber, Emmanuel. See *Sidransky and Farber,* 231

Felts, J. M., Doell, Ruth G., and **Chaikoff, I. L.** The effect of insulin on the pathways of conversion of glucose to fatty acids in the liver, 473

Field, Lamar. See *McGlory, Olsen, and Field,* 299

Francis, Faith Ellen. See *Kinsella, Francis, Thayer, and Doisy,* 265

Freedland, R. A. See *Hansen, Freedland, and Scott,* 391

Friedberg, Felix, Adler, Julius, and **Lardy, Henry A.** The carboxylation of propionic acid by liver mitochondria, 943

Frieden, Earl. See *Younathan, Frieden, and Dittmer,* 531

G

Gafford, R. D. See *Gross, Gafford, and Tatum,* 781

Gocke, David J. See *McKinney and Gocke,* 605

Goldin, Abraham. See *Kaplan, Goldin, Humphreys, Ciotti, and Stolzenbach,* 287

Granick, S. See *Mauzerall and Granick,* 435

Gray, Clarke T. See *Brodie and Gray,* 853

Green, Maurice, and **Cohen, Seymour S.** Enzymatic conversion of L-fucose to L-fuculose, 557

Greenberg, David M. See *Sayre, Jensen, and Greenberg,* 111

Greenberg, G. Robert. Preparation of 5′-phosphoribosyl-5-amino-4-imidazolecarboxamide, 423

— and **Spilman, Edra L.** Isolation of 5-amino-4-imidazolecarboxamide riboside, 411

Gross, S. R., Gafford, R. D., and **Tatum, E. L.** The metabolism of protocatechuic acid by *Neurospora,* 781

—. See *Tatum and Gross,* 797

Gurin, Samuel. See *Staple, Lynn, and Gurin,* 845

H

Hageman, Elizabeth. See *Hansen, Freedland, and Scott,* 391

Hamill, Robert L. See *Byerrum, Dewey, Hamill, and Ball,* 345

Hanig, Martin, and **Shainoff, John Rieden.** Specific refractive increment of serum lipoproteins obtained by flotation, 479

Hansen, R. G., Freedland, R. A., and **Scott, H. M.** Lactose metabolism. V. The uridine nucleotides in galactose toxicity, 391

Harland, Brenda F. See *Dietrich and Harland,* 383

Harper, A. E. See *Ericson and Harper,* 49

—. See *Ericson, Harper, Williams, and Elvehjem,* 59

Harrington, Catherine. See *Paul, Bryson, and Harrington,* 463

Harris, Anne. See *Loftfield and Harris,* 151

Harris, J. Ieuan. See *Cole, Li, Harris, and Pon,* 903

Hauge, Jens G., Crane, F. L., and **Beinert, Helmut.** The mechanism of dehydrogenation of fatty acyl derivatives of coenzyme A. III. Palmityl CoA dehydrogenase, 727

Hein, R. E. See *Clegg, Ericson, Hein, McFarland, and Leonard,* 447

Herling, Friederike. See *Axelrod, Miller, and Herling,* 455

Herranen, Ailene. See *Mueller and Herranen,* 585

Hilton, Mary A., Barnes, Frederick W., Jr., and **Enns, Theodore.** Mechanisms in enzymatic transamination. Effect of α-ketoglutarate concentration on the rate of exchange of the hydrogen of aspartate, 833

Hirs, C. H. W. The oxidation of ribonuclease with performic acid, 611

—, **Moore, Stanford,** and **Stein, William H.** Peptides obtained by tryptic hydrolysis of performic acid-oxidized ribonuclease, 623

Hodge, Harold Carpenter. See *Neuman, Morrow, Toribara, Casarett, Mulryan, and Hodge,* 551

Hoffman, Philip, Meyer, Karl, and **Linker, Alfred.** Transglycosylation during the mixed digestion of hyaluronic acid and chondroitin sulfate by testicular hyaluronidase, 653

—. See *Linker, Meyer, and Hoffman,* 13

Hokin, Lowell E. See *Hokin and Hokin,* 85

Hokin, Mabel R. The formation of amylase by mouse pancreas *in vitro,* 77

— and **Hokin, Lowell E.** Protein synthesis and ribonucleic acid metabolism in mouse pancreas *in vitro* after whole body irradiation with x-rays, 85

Humphreys, Stewart R. See *Kaplan, Goldin, Humphreys, Ciotti,* and *Stolzenbach,* 287

I

Inamine, Edward. See *Stevens, Inamine, and De Long,* 405

J

Jensen, David. See *Sayre, Jensen, and Greenberg,* 111

K

Kaihara, Masako. See *Lindenblad, Kaihara, and Price,* 893

Kalckar, Herman M. See *Kielley, Kalckar, and Bradley,* 95

Kaplan, Nathan O., Goldin, Abraham, Humphreys, Stewart R., Ciotti, Margaret M., and **Stolzenbach, Francis E.** Pyridine nucleotide synthesis in the mouse, 287

Karjala, S. A., Turnquest, Byron, 3rd, and **Schayer, Richard W.** Urinary metabolites of radioactive histamine, 9

Kassell, Beatrice, and **Laskowski, M.** The comparative resistance to pepsin of six naturally occurring trypsin inhibitors, 203

Kearney, Edna B., and **Singer, Thomas P.** Studies on succinic dehydrogenase. I. Preparation and assay of the soluble dehydrogenase, 963

Kielley, W. Wayne, Kalckar, Herman M., and **Bradley, Louise B.** The hydrolysis of purine and pyrimidine nucleoside triphosphates by myosin, 95

Kilboy, Carol. See *Hansen, Freedland, and Scott,* 391

Kile, Helen L. See *Lee,* 211

Kinsella, Ralph A., Jr., Francis, Faith Ellen, Thayer, Sidney A., and **Doisy, Edward A.** Enteric excretion of metabolites of steroid hormones in the human. I. Isolation of estriol from meconium, 265

Koch, Arthur L. The metabolism of methylpurines by *Escherichia coli.* I. Tracer studies, 181

— and **Lamont, William A.** The metabolism of methylpurines by *Escherichia coli.* II. Enzymatic studies, 189

Koeppe, O. J., Boyer, P. D., and **Stulberg, M. P.** On the occurrence, equilibria, and site of acyl-enzyme formation of glyceraldehyde-3-phosphate dehydrogenase, 569

Korey, Saul R. See *Wittenberg, Korey, and Swenson,* 39

Koshland, D. E., Jr. See *Kowalsky, Wyttenbach, Langer, and Koshland,* 719

Kowalsky, Arthur, Wyttenbach, C., Langer, L., and **Koshland, D. E., Jr.** Transfer of oxygen in the glutamine synthetase reaction, 719

L

La Du, Bert N., and **Zannoni, Vincent G.** The tyrosine oxidation system of liver. III. Further studies on the oxidation of *p*-hydroxyphenylpyruvic acid, 273

Lamont, William A. See *Koch and Lamont*, 189

Langer, L. See *Kowalsky, Wyttenbach, Langer, and Koshland*, 719

Lardy, Henry A., and **Adler, Julius.** Synthesis of succinate from propionate and bicarbonate by soluble enzymes from liver mitochondria, 933

—. See *Friedberg, Adler, and Lardy*, 943

—. See *Tomita and Lardy*, 595

Laskowski, M. See *Kassell and Laskowski*, 203

Lavin, Frances B. See *Radin, Brown, and Lavin*, 977

Lee, Norman D. The induced increase in the tryptophan peroxidase-oxidase activity of rat liver: time studies, 211

Lehninger, Albert L. See *Cooper and Lehninger*, 489, 519

—. See *Devlin and Lehninger*, 507

Leonard, G. W. See *Clegg, Ericson, Hein, McFarland, and Leonard*, 447

Li, Choh Hao. See *Cole, Li, Harris, and Pon*, 903

Lichstein, Herman C. Vitamin B_6 and protein synthesis, 27

Lieberman, Irving. Inorganic triphosphate synthesis by muscle adenylate kinase, 307

Lindenblad, G. E., Kaihara, Masako, and **Price, J. M.** The occurrence of *N*-methyl-2-pyridone-5-carboxylic acid and its glycine conjugate in normal human urine, 893

Linker, Alfred, Meyer, Karl, and **Hoffman, Philip.** The production of unsaturated uronides by bacterial hyaluronidases, 13

—. See *Hoffman, Meyer, and Linker*, 653

Lipmann, Fritz. See *Bandurski and Lipmann*, 741

Loftfield, Robert B., and **Harris, Anne.** Participation of free amino acids in protein synthesis, 151

Luck, J. Murray. See *Nordby and Luck*, 399

Lynn, William S., Jr. See *Staple, Lynn, and Gurin*, 845

M

MacNair, Margaret B. See *Schmid, Rosa, and MacNair*, 769

Magasanik, Boris. See *Balis, Brooke, Brown, and Magasanik*, 917

Mattson, F. H., and **Beck, L. W.** The specificity of pancreatic lipase for the primary hydroxyl groups of glycerides, 735

Mauzerall, D., and **Granick, S.** The occurrence and determination of δ-aminolevulinic acid and porphobilinogen in urine, 435

McFarland, R. H. See *Clegg, Ericson, Hein, McFarland, and Leonard*, 447

McGlory, Donald H., Olsen, Norman S., and **Field, Lamar.** A pressor material produced by the action of pepsin on casein, 299

McKibbin, J. M. See *Spiro and McKibbin*, 643

McKinney, Gordon R., and **Gocke, David J.** Determination of glyoxalase activity, 605

McNutt, Walter S., Jr. The incorporation of the pyrimidine ring of adenine into the isoalloxazine ring of riboflavin, 365

Mead, James F., and **Slaton, William H., Jr.** Metabolism of essential fatty acids. III. Isolation of 5,8,11-eicosatrienoic acid from fat-deficient rats, 705

Meyer, Karl. See *Hoffman, Meyer, and Linker*, 653

—. See *Linker, Meyer, and Hoffman*, 13

Miller, Leon L. See *Axelrod, Miller, and Herling*, 455

Mills, Gordon C., and **Wood, John L.** Mercapturic acid precursors, 1

Moore, Stanford. See *Hirs, Moore, and Stein,* 623
—. See *Tallan, Moore, and Stein,* 257
Morrow, P. E. See *Neuman, Morrow, Toribara, Casarett, Mulryan, and Hodge,* 551
Mounter, L. A. Dialkylfluorophosphatase of kidney. IV. Dissociation constant of active groups, 677
— and **Dien, Lien Tien H.** Dialkylfluorophosphatase of kidney. V. The hydrolysis of organophosphorus compounds, 685
Mueller, Gerald C., and **Herranen, Ailene.** Metabolism of 1-carbon fragments by surviving uteri from estradiol-treated rats, 585
Mulryan, B. J. See *Neuman, Morrow, Toribara, Casarett, Mulryan, and Hodge,* 551

N

Nakada, Henry I. The metabolism of fructose by isolated rat diaphragms, 319
Neuman, W. F., Morrow, P. E., Toribara, T. Y., Casarett, L. J., Mulryan, B. J., and **Hodge, Harold Carpenter.** Evidence for complex ion formation in the calcium bicarbonate system, 551
Nikiforuk, Gordon, and **Colowick, Sidney P.** The purification and properties of 5-adenylic acid deaminase from muscle, 119
Nordby, Gordon L., and **Luck, J. Murray.** Perfluorooctanoic acid interactions with human serum albumin, 399

O

O'Brien, R. D. Protection of cholinesterase by ethanol against inhibition by organophosphates *in vitro,* 927
O'Dell, Boyd L. See *Bruemmer and O'Dell,* 283
Oldham, Ada M. See *Lee,* 211
Olsen, Norman S. See *McGlory, Olsen, and Field,* 299

P

Palleroni, Norberto J., and **Doudoroff, Michael.** Preparation and properties of D-rhamnulose (6-deoxy-D-fructose) and glucosyl rhamnuloside, 957
Paul, M. F., Bryson, Melvin J., and **Harrington, Catherine.** Effect of Furacin on pyruvate metabolism, 463
Peterson, Ralph E. See *Udenfriend, Titus, Weissbach, and Peterson,* 335
Plaut, G. W. E., and **Broberg, Patricia L.** Biosynthesis of riboflavin. III. Incorporation of C^{14}-labeled compounds into the ribityl side chain, 131
Pon, Ning G. See *Cole, Li, Harris, and Pon,* 903
Price, J. M. See *Brown and Price,* 985
—. See *Lindenblad, Kaihara, and Price,* 893

R

Radin, Norman S., Brown, James R., and **Lavin, Frances B.** The preparative isolation of cerebrosides, 977
Ravel, Joanne M. See *Dunn, Ravel, and Shive,* 809
Reiner, Buena. See *Zamenhof, Reiner, De Giovanni, and Rich,* 165
Reissig, José L. Phosphoacetylglucosamine mutase of *Neurospora,* 753
Rich, Kenneth. See *Zamenhof, Reiner, De Giovanni, and Rich,* 165
Roberts, D. W. A. The wheat leaf phosphatases. I. A survey of the inhibitors at pH 5.7, 711
Robinson, William G. See *Bachhawat, Robinson, and Coon,* 539
Rosa, Edith C. See *Schmid, Rosa, and MacNair,* 769
Rosenberg, Arthur J. The copper-promoted decomposition of vitamin B_{12} in solutions of ascorbic acid, 951

S

Samuels, Leo T. See *Beyer and Samuels,* 69
Sayre, Francis W., Jensen, David, and **Greenberg, David M.** Substrate induction of threonine dehydrase *in vivo* and in perfused rat livers, 111
Schayer, Richard W. See *Karjala, Turnquest, and Schayer,* 9

Schmid, K., Rosa, Edith C., and **MacNair, Margaret B.** Fractionation of the proteins of human synovial fluid and plasma, 769
Scott, H. M. See *Hansen, Freedland, and Scott,* 391
Shainoff, John Rieden. See *Hanig and Shainoff,* 479
Shive, William. See *Dunn, Ravel, and Shive,* 809
Sidranksy, H., and **Farber, Emmanuel.** The effects of ethionine upon protein metabolism in the pancreas of rats, 231
Simpson, T. H., Jr. See *Davis and Simpson,* 885
Singer, Thomas P. See *Kearney and Singer,* 963
Slaton, William H., Jr. See *Mead and Slaton,* 705
Smith, Donald G. See *Young and Smith,* 161
Spilman, Edra L. See *Greenberg and Spilman,* 411
Spiro, Mary Jane, and **McKibbin, J. M.** The lipides of rat liver cell fractions, 643
Stadtman, Thressa C. See *Wright and Stadtman,* 863
Staple, Ezra, Lynn, William S., Jr., and **Gurin, Samuel.** An enzymatic cleavage of the cholesterol side chain, 845
Stein, William H. See *Hirs, Moore, and Stein,* 623
—. See *Tallan, Moore, and Stein,* 257
Stevens, Carl M., Inamine, Edward, and **De Long, Chester W.** The rates of incorporation of L-cystine and D- and L-valine in penicillin biosynthesis, 405
Stolzenbach, Francis E. See *Kaplan, Goldin, Humphreys, Ciotti, and Stolzenbach,* 287
Stulberg, M. P. See *Koeppe, Boyer, and Stulberg,* 569
Svenneby, Gyda. See *Arata, Svenneby, Williams, and Elvehjem,* 327
Swenson, Franklin H. See *Wittenberg, Korey, and Swenson,* 39

T

Tallan, Harris H., Moore, Stanford, and **Stein, William H.** *N*-Acetyl-L-aspartic acid in brain, 257
Tatum, E. L., and **Gross, S. R.** Incorporation of carbon atoms 1 and 6 of glucose into protocatechuic acid by *Neurospora,* 797
—. See *Gross, Gafford, and Tatum,* 781
Thayer, Sidney A. See *Kinsella, Francis, Thayer, and Doisy,* 265
Titus, Elwood. See *Udenfriend, Titus, Weissbach, and Peterson,* 335
Tomita, Kenkichi, and **Lardy, Henry A.** Synthesis and biological activity of some triiodinated analogues of thyroxine, 595
Toribara, T. Y. See *Neuman, Morrow, Toribara, Casarett, Mulryan, and Hodge,* 551
Turnquest, Byron, 3rd. See *Karjala, Turnquest, and Schayer,* 9

U

Udenfriend, Sidney, Titus, Elwood, Weissbach, Herbert, and **Peterson, Ralph E.** Biogenesis and metabolism of 5-hydroxyindole compounds, 335

W

Weinhouse, Sidney. See *Wenner and Weinhouse,* 691
Weissbach, Herbert. See *Udenfriend, Titus, Weissbach, and Peterson,* 335
Wenner, Charles E., and **Weinhouse, Sidney.** An isotope tracer study of glucose catabolism pathways in liver, 691
Westley, John, and **Ceithaml, Joseph.** Synthesis of histidine in *Escherichia coli.* II. Radioisotopic tracer studies, 139
Williams, J. N., Jr. See *Arata, Svenneby, Williams, and Elvehjem,* 327
—. See *Ericson, Harper, Williams, and Elvehjem,* 59
Wittenberg, Jonathan B., Korey, Saul R., and **Swenson, Franklin H.** The de-

termination of higher fatty aldehydes in tissues, 39
Wood, Henry N. See *Balls and Wood*, 245
Wood, John L. See *Mills and Wood*, 1
Woolley, D. W. See *Alivisatos and Woolley*, 823
Wright, Barbara E. The rôle of polyglutamyl pteridine coenzymes in serine metabolism. II. A comparison of various pteridine derivatives, 873
— and **Stadtman, Thressa C.** The rôle of polyglutamyl pteridine coenzymes in serine metabolism. I. Cofactor requirements in the conversion of serine to glycine, 863
Wyttenbach, C. See *Kowalsky, Wyttenbach, Langer, and Koshland*, 719

Y

Younathan, Ezzat S., Frieden, Earl, and **Dittmer, Karl.** Sensitivity of rat liver xanthine oxidase to amino acid analogues, 531
Young, E. Gordon, and **Smith, Donald G.** The amino acids in the ichthulokeratin of salmon eggs, 161

Z

Zamenhof, Stephen, Reiner, Buena, De Giovanni, Rosalie, and **Rich, Kenneth.** Introduction of unnatural pyrimidines into deoxyribonucleic acid of *Escherichia coli*, 165
Zannoni, Vincent G. See *La Du and Zannoni*, 273
Zastrow, Norma. See *Kearney and Singer*, 963

INDEX TO SUBJECTS

A

Acetyl-L-aspartic acid: *N*-, brain, *Tallan, Moore, and Stein,* 257

Acetyl chymotrypsin: Ethanol and, reaction, *Balls and Wood,* 245

Acyl-enzyme: Glyceraldehyde-3-phosphate dehydrogenase formation, relation, *Koeppe, Boyer, and Stulberg,* 569

Adenine: Pyrimidine ring, incorporation into riboflavin isoalloxazine ring, *McNutt,* 365

Adenylate kinase: Muscle, inorganic triphosphate synthesis, relation, *Lieberman,* 307

Adenylic acid deaminase: 5-, muscle, purification and properties, *Nikiforuk and Colowick,* 119

Adrenal(s): Steroid-3β-ol-dehydrogenase, *Beyer and Samuels,* 69

Aerobacter aerogenes: Mutants, purineless, purine utilization, *Balis, Brooke, Brown, and Magasanik,* 917

Alanine: Phenyl-. *See* Phenylalanine

Albumin: Blood serum, perfluorooctanoic acid and, interactions, *Nordby and Luck,* 399

Aldehyde(s): Fatty, higher, tissues, determination, *Wittenberg, Korey, and Swenson,* 39

Amide(s): 5′-Phosphoribosyl-5-amino-4-imidazolecarbox-. *See* Phosphoribosyl-5-amino-4-imidazolecarboxamide

Amine(s): Hydroxyl-. *See* Hydroxylamine

Amino acid(s): Analogues, liver xanthine oxidase, effect, *Younathan, Frieden, and Dittmer,* 531

Free, protein synthesis, rôle, *Loftfield and Harris,* 151

Ichthulokeratin, salmon eggs, *Young and Smith,* 161

Liver betaine-homocysteine transmethylase, effect, *Ericson and Harper,* 49

Amino-4-imidazolecarboxamide riboside: 5-, isolation, *Greenberg and Spilman,* 411

Aminolevulinic acid: δ-, urine, determination, *Mauzerall and Granick,* 435

Amylase: Formation, pancreas, *Hokin,* 77

Ascorbic acid: Solutions, vitamin B_{12} decomposition, copper-promoted, *Rosenberg,* 951

Aspartate: Hydrogen exchange rate, α-ketoglutarate effect, *Hilton, Barnes, and Enns,* 833

Aspartic acid: *N*-Acetyl-L-. *See* Acetyl-L-aspartic acid

B

Bacteria: Hyaluronidases, uronides, unsaturated, production, *Linker, Meyer, and Hoffman,* 13

Oxidation and phosphorylation, *Brodie and Gray,* 853

Phosphorylation and oxidation, *Brodie and Gray,* 853

See also Aerobacter, Escherichia, Lactobacillus

Betaine-homocysteine transmethylase: Liver, amino acid effect, *Ericson and Harper,* 49

—, diet effect, *Ericson and Harper,* 49

Ericson, Harper, Williams, and Elvehjem, 59

—, protein effect, *Ericson and Harper,* 49

—, vitamin B_{12} effect, *Ericson, Harper, Williams, and Elvehjem,* 59

Bicarbonate: Blood serum, determination, photometric, *Davis and Simpson,* 885

Calcium-, system, complex ion formation, *Neuman, Morrow, Toribara, Casarett, Mulryan, and Hodge,* 551

Succinate synthesis from, liver mitochondrial enzymes, *Lardy and Adler,* 933

Blood plasma: Proteins, *Schmid, Rosa, and MacNair,* 769
Blood serum: Albumin, perfluorooctanoic acid and, interactions, *Nordby and Luck,* 399
Bicarbonate, determination, photometric, *Davis and Simpson,* 885
Calcium binding, electrophoretic component relation, *Clegg, Ericson, Hein, McFarland, and Leonard,* 447
Lipoproteins, refractive increment, *Hanig and Shainoff,* 479
Brain: *N*-Acetyl-L-aspartic acid, *Tallan, Moore, and Stein,* 257
Butyrate: β-Hydroxy-. *See* Hydroxybutyrate

C

Calcium: -Bicarbonate system, complex ion formation, *Neuman, Morrow, Toribara, Casarett, Mulryan, and Hodge,* 551
Binding, blood sera, electrophoretic component relation, *Clegg, Ericson, Hein, McFarland, and Leonard,* 447
Carbon: Fragments, metabolism, uterus, estradiol-treated, *Mueller and Herranen,* 585
Carboxylase: Oxalacetic. *See* Oxalacetic carboxylase
Carboxylic acid: Methyl-2-pyridone-5-. *See* Methyl-2-pyridone-5-carboxylic acid
Casein: Pressor material, pepsin relation, *McGlory, Olsen, and Field,* 299
Catechuic acid: Proto-. *See* Protocatechuic acid
Cerebroside(s): Isolation, *Radin, Brown, and Lavin,* 977
Cholesterol: Side chain, cleavage, enzymatic, *Staple, Lynn, and Gurin,* 845
Cholinesterase: Ethanol and organophosphates, effect, *O'Brien,* 927
Organophosphates and ethanol effect, *O'Brien,* 927
Chondroitin sulfate: Digestion, testicular hyaluronidase, transglycosylation, *Hoffman, Meyer, and Linker,* 653
Coenzyme(s): A, acyl derivatives, fatty, dehydrogenation, *Hauge, Crane, and Beinert,* 727
—, — —, —, dehydrogenation mechanism, palmityl coenzyme A dehydrogenase, relation, *Hauge, Crane, and Beinert,* 727
—, hydroxyisovaleryl. *See* Hydroxyisovaleryl coenzyme A
Polyglutamyl pteridine. *See* Polyglutamyl pteridine coenzyme
Copper: Phosphorus determination, Lowry-Lopez, effect, *Bruemmer and O'Dell,* 283
Vitamin B_{12} decomposition, ascorbic acid solutions, effect, *Rosenberg,* 951
Corticotropin(s): *Cole, Li, Harris, and Pon,* 903
α-, pepsin action, *Cole, Li, Harris, and Pon,* 903
Cystine: L-, incorporation rates, penicillin biosynthesis, *Stevens, Inamine, and De Long,* 405
Cytochrome: *c*, heart, molecular weight, *Atlas and Farber,* 31
—, β-hydroxybutyrate to, mitochondria enzyme complex, relation, *Devlin and Lehninger,* 507
—, oxygen from, mitochondria enzyme complex, relation, *Cooper and Lehninger,* 519

D

Deaminase: 5-Adenylic acid. *See* Adenylic acid deaminase
Dehydrase: Threonine. *See* Threonine dehydrase
Dehydrogenase: Glyceraldehyde-3-phosphate. *See* Glyceraldehyde-3-phosphate dehydrogenase
Palmityl coenzyme A. *See* Palmityl coenzyme A dehydrogenase
Steroid-3β-ol-. *See* Steroid-3β-ol-dehydrogenase
Succinic. *See* Succinic dehydrogenase

Deoxy-D-fructose: 6-, preparation and properties, *Palleroni and Doudoroff*, 957
Deoxyribonucleic acid: *Escherichia coli*, pyrimidines, introduction into, *Zamenhof, Reiner, De Giovanni, and Rich*, 165
Dialkylfluorophosphatase: Kidney, dissociation constant, *Mounter*, 677
—, organophosphorus compounds, hydrolysis, effect, *Mounter and Dien*, 685
Diaphragm(s): Fructose metabolism, *Nakada*, 319
Diet: Liver betaine-homocysteine transmethylase, effect, *Ericson and Harper*, 49
Ericson, Harper, Williams, and Elvehjem, 59
Diphosphonucleoside(s): Yeast ribonucleic acids, enzyme relation, *Crestfield and Allen*, 103
Diphosphopyridine nucleotidase: Spleen, solubilization and purification, *Alivisatos and Woolley*, 823

E

Egg(s): Salmon, ichthulokeratin amino acids, *Young and Smith*, 161
Eicosatrienoic acid: Isolation, fat deficiency, *Mead and Slaton*, 705
Electrophoretic component: Blood sera calcium binding, relation, *Clegg, Ericson, Hein, McFarland, and Leonard*, 447
Enzyme(s): Acyl-. *See* Acyl-enzyme
Cholesterol side chain cleavage, *Staple, Lynn, and Gurin*, 845
Complex, mitochondria, cytochrome *c* to oxygen, relation, *Cooper and Lehninger*, 519
—, —, β-hydroxybutyrate to cytochrome *c*, relation, *Devlin and Lehninger*, 507
—, —, — — oxygen, relation, *Cooper and Lehninger*, 489
—, —, phosphorylation, oxidative, relation, *Cooper and Lehninger*, 489, 519
Devlin and Lehninger, 507
Enzyme(s)—*continued:*
L-Fucose conversion to L-fuculose, *Green and Cohen*, 557
β-Hydroxyisovaleryl coenzyme A carboxylation, *Bachhawat, Robinson, and Coon*, 539
Liver mitochondria, succinate synthesis from propionate and bicarbonate, *Lardy and Adler*, 933
Methylpurines, metabolism, *Escherichia coli*, effect, *Koch and Lamont*, 189
Ribonucleic acid hydrolysis, kinetics, *Edelhoch and Coleman*, 351
Transamination, mechanisms, *Hilton, Barnes, and Enns*, 833
Yeast ribonucleic acid diphosphonucleosides, relation, *Crestfield and Allen*, 103
See also Amylase, Carboxylase, etc.
Escherichia coli: Deoxyribonucleic acid, pyrimidine introduction into, *Zamenhof, Reiner, De Giovanni, and Rich*, 165
Histidine synthesis, radioisotopic tracer use, *Westley and Ceithaml*, 139
Methylpurines, metabolism, enzyme effect, *Koch and Lamont*, 189
—, —, tracer use, *Koch*, 181
Esterase: Cholin-. *See* Cholinesterase
Estradiol: -Treated uteri, carbon fragments, metabolism, *Mueller and Herranen*, 585
Estriol: Meconium, isolation, *Kinsella, Francis, Thayer, and Doisy*, 265
Ethanol: Acetyl chymotrypsin and, reaction, *Balls and Wood*, 245
Cholinesterase, effect, *O'Brien*, 927
Ethionine: Pancreas protein metabolism, effects, *Sidransky and Farber*, 231

F

Fat: Deficiency, 5,8,11-eicosatrienoic acid isolation, *Mead and Slaton*, 705
Digestion, intestine, fatty acids, free and glyceride, exchange, *Ahrens and Borgström*, 665

Fat—*continued:*
Liver, development, metabolic factors and threonine relation, *Arata, Svenneby, Williams, and Elvehjem,* 327
Fatty acid(s): Essential, metabolism, *Mead and Slaton,* 705
Free and glyceride, exchange, fat digestion, intestine, *Ahrens and Borgström,* 665
Glucose conversion to, liver, insulin effect, *Felts, Doell, and Chaikoff,* 473
Glyceride and free, exchange, fat digestion, intestine, *Ahrens and Borgström,* 665
Fructose: 6-Deoxy-D-. *See* Deoxy-D-fructose
Metabolism, diaphragms, *Nakada,* 319
Fucose: L-, L-fuculose formation from, enzymatic, *Green and Cohen,* 557
Fuculose: L-, L-fucose conversion to, enzymatic, *Green and Cohen,* 557
Furacin: Pyruvate metabolism, effect, *Paul, Bryson, and Harrington,* 463

G

Galactose: Toxicity, uridine nucleotides, relation, *Hansen, Freedland, and Scott,* 391
Glucose: Carbon incorporation into protocatechuic acid, *Neurospora, Tatum and Gross,* 797
Catabolism pathways in liver, isotope tracer use, *Wenner and Weinhouse,* 691
Fatty acids from, liver, insulin effect, *Felts, Doell, and Chaikoff,* 473
Glucosyl rhamnuloside: Preparation and properties, *Palleroni and Doudoroff,* 957
Glutamine synthetase: Reaction, oxygen transfer, *Kowalsky, Wyttenbach, Langer, and Koshland,* 719
Glutarate: Keto-. *See* Ketoglutarate
Glyceraldehyde-3-phosphate dehydrogenase: Formation, acyl-enzyme relation, *Koeppe, Boyer, and Stulberg,* 569
Glyceride(s): Hydroxyl groups, pancreatic lipase relation, *Mattson and Beck,* 735
Glycine: Conjugate, *N*-methyl-2-pyridone-5-carboxylic acid, urine, *Lindenblad, Kaihara, and Price,* 893
Serine conversion to, polyglutamyl pteridine coenzymes, rôle, *Wright and Stadtman,* 863
Glycolic acid: Utilization, tobacco methyl group synthesis, *Byerrum, Dewey, Hamill, and Ball,* 345
Glyoxalase: Activity determination, *McKinney and Gocke,* 605

H

Heart: Cytochrome *c*, molecular weight, *Atlas and Farber,* 31
Histamine: Radioactive, urine metabolites, *Karjala, Turnquest, and Schayer,* 9
Histidine: Synthesis, *Escherichia coli,* radioisotopic tracer use, *Westley and Ceithaml,* 139
Hormone(s): Metabolites, excretion, enteric, *Kinsella, Francis, Thayer, and Doisy,* 265
Hyaluronic acid: Digestion, testicular hyaluronidase, transglycosylation, *Hoffman, Meyer, and Linker,* 653
Hyaluronidase(s): Bacteria, uronides, unsaturated, production, *Linker, Meyer, and Hoffman,* 13
Testes, hyaluronic acid and chondroitin sulfate digestion, transglycosylation, *Hoffman, Meyer, and Linker,* 653
Hydroxybutyrate: β-, cytochrome *c* from, mitochondria enzyme complex, relation, *Devlin and Lehninger,* 507
—, oxygen from, mitochondria enzyme complex, relation, *Cooper and Lehninger,* 489
Hydroxyindole compound(s): 5-, biogenesis and metabolism, *Udenfriend, Titus, Weissbach, and Peterson,* 335
Hydroxyisovaleryl coenzyme A: β-, carboxylation, enzyme, *Bachhawat, Robinson, and Coon,* 539

Hydroxylamine(s): Riboflavin and, reaction, *Dietrich and Harland*, 383
Xanthine oxidase, effect, *Dietrich and Borries*, 375
Hydroxyl group(s): Glycerides, pancreatic lipase relation, *Mattson and Beck*, 735
Hydroxyphenylpyruvic acid: Oxidation, liver, *La Du and Zannoni*, 273

I

Ichthulokeratin: Amino acids, salmon eggs, *Young and Smith*, 161
Indole compound(s): 5-Hydroxy-. *See* Hydroxyindole compound
Insulin: Liver glucose conversion to fatty acids, effect, *Felts, Doell, and Chaikoff*, 473
Intestine: Steroid hormones, metabolites, excretion, *Kinsella, Francis, Thayer, and Doisy*, 265
Isoalloxazine: Ring, riboflavin, from adenine pyrimidine ring, *McNutt*, 365

K

Keratin: Ichthulo-. *See* Ichthulokeratin
Ketoglutarate: α-, aspartate hydrogen exchange rate, effect, *Hilton, Barnes, and Enns*, 833
Kidney: Dialkylfluorophosphatase, dissociation constant, *Mounter*, 677
—, organophosphorus compounds, hydrolysis effect, *Mounter and Dien*, 685
Kinase: Adenylate. *See* Adenylate kinase
Ribo-. *See* Ribokinase

L

Lactic acid: Phenyl-. *See* Phenyllactic acid
Lactobacillus casei: Phenyllactic acid utilization, *Eiduson and Dunn*, 175
Lactose: Metabolism, *Hansen, Freedland, and Scott*, 391
Levulinic acid: δ-Amino-. *See* Aminolevulinic acid
Lipase: Pancreas, glyceride hydroxyl groups, relation, *Mattson and Beck*, 735
Lipide(s): Liver, *Spiro and McKibbin*, 643
Lipoprotein(s): Blood serum, refractive increment, *Hanig and Shainoff*, 479
Liver: Betaine-homocysteine transmethylase, amino acid effect, *Ericson and Harper*, 49
— —, diet effect, *Ericson and Harper*, 49
Ericson, Harper, Williams, and Elvehjem, 59
— —, protein effect, *Ericson and Harper*, 49
— —, vitamin B_{12} effect, *Ericson, Harper, Williams, and Elvehjem*, 59
Fatty, development, metabolic factors and threonine relation, *Arata, Svenneby, Williams, and Elvehjem*, 327
Glucose catabolism pathways, isotope tracer use, *Wenner and Weinhouse*, 691
— conversion to fatty acids, insulin effect, *Felts, Doell, and Chaikoff*, 473
p-Hydroxyphenylpyruvic acid oxidation, *La Du and Zannoni*, 273
Lipides, *Spiro and McKibbin*, 643
Mitochondrial enzymes, succinate synthesis from propionate and bicarbonate, *Lardy and Adler*, 933
Mitochondria oxalacetic carboxylase, *Bandurski and Lipmann*, 741
—, propionic acid carboxylation, *Friedberg, Adler, and Lardy*, 943
Ribokinase, purification and properties, *Agranoff and Brady*, 221
Testosterone metabolism, *Axelrod and Miller*, 455
Threonine dehydrase substrate induction, *Sayre, Jensen, and Greenberg*, 111
Tryptophan peroxidase-oxidase, *Lee*, 211
Tyrosine oxidation system, *La Du and Zannoni*, 273

XUM

Liver—*continued:*
Xanthine oxidase, amino acid analogues, effect, *Younathan, Frieden, and Dittmer,* 531
Lowry-Lopez: Phosphorus method, sulfhydryl compounds and copper effect, *Bruemmer and O'Dell,* 283

M

Meconium: Estriol isolation, *Kinsella, Francis, Thayer, and Doisy,* 265
Mercapturic acid: Precursors, *Mills and Wood,* 1
Metabolic factor(s): Liver, fatty, development, threonine and, relation, *Arata, Svenneby, Williams, and Elvehjem,* 327
Methyl group: Synthesis, tobacco, glycolic acid utilization, *Byerrum, Dewey, Hamill, and Ball,* 345
Methylpurine(s): Metabolism, *Escherichia coli,* enzymatic effect, *Koch and Lamont,* 189
—, — —, tracer use, *Koch,* 181
Methyl-2-pyridone-5-carboxylic acid: *N*-, glycine conjugate, urine, *Lindenblad, Kaihara, and Price,* 893
—, urine, *Lindenblad, Kaihara, and Price,* 893
Mitochondrion: Enzyme complex, cytochrome *c* to oxygen, relation, *Cooper and Lehninger,* 519
— —, β-hydroxybutyrate to cytochrome *c*, relation, *Devlin and Lehninger,* 507
— —, — — oxygen, relation, *Cooper and Lehninger,* 489, 507
— —, phosphorylation, oxidative, relation, *Cooper and Lehninger,* 489, 519
Devlin and Lehninger, 507
Liver, enzymes, succinate synthesis from propionate and bicarbonate, *Lardy and Adler,* 933
—, oxalacetic carboxylase, *Bandurski and Lipmann,* 741
—, propionic acid carboxylation, *Friedberg, Adler, and Lardy,* 943
Muscle: Adenylate kinase, inorganic triphosphate synthesis, relation, *Lieberman,* 307
Muscle—*continued:*
5-Adenylic acid deaminase, purification and properties, *Nikiforuk and Colowick,* 119
See also Heart
Mutase: Phosphoacetylglucosamine. *See* Phosphoacetylglucosamine mutase
Myosin: Purine nucleoside triphosphates, hydrolysis, effect, *Kielley, Kalckar, and Bradley,* 95
Pyrimidine nucleoside triphosphates, hydrolysis, effect, *Kielley, Kalckar, and Bradley,* 95

N

Neurospora: Glucose carbon incorporation into protocatechuic acid, *Tatum and Gross,* 797
Phosphoacetylglucosamine mutase, *Reissig,* 753
Protocatechuic acid metabolism, *Gross, Gafford, and Tatum,* 781
Nuclease: Ribo-. *See* Ribonuclease
Nucleic acid: Deoxyribo-. *See* Deoxyribonucleic acid
Ribo-. *See* Ribonucleic acid
Nucleoside(s): Diphospho-. *See* Diphosphonucleoside
Nucleotidase: Diphosphopyridine. *See* Diphosphopyridine nucleotidase
Nucleotide(s): Pyridine. *See* Pyridine nucleotide
Uridine. *See* Uridine nucleotide

O

Octanoic acid: Perfluoro-. *See* Perfluorooctanoic acid
Organophosphate(s): Cholinesterase, effect, *O'Brien,* 927
Organophosphorus compound(s): Hydrolysis, kidney dialkylfluorophosphatase effect, *Mounter and Dien,* 685
Oxalacetic carboxylase: Liver mitochondria, *Bandurski and Lipmann,* 741
Oxazine: Isoall-. *See* Isoalloxazine
Oxidase: Peroxidase-, tryptophan, liver, *Lee,* 211
Xanthine. *See* Xanthine oxidase

Oxygen: Cytochrome *c* to, mitochondria enzyme complex, relation, *Cooper and Lehninger*, 519
β-Hydroxybutyrate to, mitochondria enzyme complex, relation, *Cooper and Lehninger*, 489
Transfer, glutamine synthetase reaction, *Kowalsky, Wyttenbach, Langer, and Koshland*, 719

P

Palmityl coenzyme A dehydrogenase: Coenzyme A, acyl derivatives, fatty, dehydrogenation mechanism, relation, *Hauge, Crane, and Beinert*, 727
Pancreas: Amylase formation, *Hokin*, 77
Lipase, glyceride hydroxyl groups, relation, *Mattson and Beck*, 735
Protein metabolism, ethionine effects, *Sidransky and Farber*, 231
— synthesis, x-ray irradiation effect, *Hokin and Hokin*, 85
Ribonucleic acid metabolism, x-ray irradiation effect, *Hokin and Hokin*, 85
Penicillin: Biosynthesis, L-cystine and D- and L-valine incorporation rates, *Stevens, Inamine, and De Long*, 405
Pepsin: Casein pressor material, relation, *McGlory, Olsen, and Field*, 299
α-Corticotropin, effect, *Cole, Li, Harris, and Pon*, 903
Trypsin inhibitors, effect, *Kassell and Laskowski*, 203
Peptide(s): Phenylalanine. *See* Phenylalanine peptide
Ribonuclease, performic acid-oxidized, tryptic hydrolysis, *Hirs, Moore, and Stein*, 623
Thienylalanine. *See* Thienylalanine peptide
Perfluorooctanoic acid: Blood serum albumin and, interactions, 399
Performic acid: Ribonuclease oxidation, effect, *Hirs*, 611
Peroxidase: -Oxidase, tryptophan, liver, *Lee*, 211
Phenylalanine: Utilization, *Lactobacillus casei, Eiduson and Dunn*, 175
Phenylalanine peptide(s): *Dunn, Ravel, and Shive*, 809
Phenyllactic acid: Utilization, *Lactobacillus casei, Eiduson and Dunn*, 175
Phenylpyruvic acid: Utilization, *Lactobacillus casei, Eiduson and Dunn*, 175
Phosphatase(s): Dialkylfluoro-. *See* Dialkylfluorophosphatase
Wheat leaf, *Roberts*, 711
Phosphate(s): Organo-. *See* Organophosphate, 927
Purine nucleoside tri-. *See* Purine nucleoside triphosphate
Pyrimidine nucleoside tri-. *See* Pyrimidine nucleoside triphosphate
Tri-. *See* Triphosphate
Phosphoacetylglucosamine mutase: *Neurospora, Reissig*, 753
Phosphoribosyl-5-amino-4-imidazolecarboxamide(s): 5′-, preparation, *Greenberg*, 423
Phosphorus: Determination, Lowry-Lopez, sulfhydryl compounds and copper effect, *Bruemmer and O'Dell*, 283
Phosphorylation: Bacteria, oxidation and, *Brodie and Gray*, 853
Oxidative, mitochondria enzyme complex, relation, *Cooper and Lehninger*, 489, 519
Devlin and Lehninger, 507
Polyglutamyl pteridine coenzyme(s): Serine conversion to glycine, rôle, *Wright and Stadtman*, 863
— metabolism, rôle, *Wright and Stadtman*, 863
Wright, 873
Porphobilinogen: Urine, determination, *Mauzerall and Granick*, 435
Pressor material: Casein, pepsin relation, *McGlory, Olsen, and Field*, 299
Propionate: Succinate synthesis from, liver mitochondrial enzymes, *Lardy and Adler*, 933

XUM

Propionic acid: Carboxylation, liver mitochondria, *Friedberg, Adler, and Lardy,* 943
Protein(s): Blood plasma, *Schmid, Rosa, and MacNair,* 769
Lipo-. *See* Lipoprotein
Liver betaine-homocysteine transmethylase, effect, *Ericson and Harper,* 49
Metabolism, pancreas, ethionine effects, *Sidransky and Farber,* 231
Synovial fluid, *Schmid, Rosa, and MacNair,* 769
Synthesis, amino acids, free, rôle, *Loftfield and Harris,* 151
—, pancreas, x-ray irradiation effect, *Hokin and Hokin,* 85
—, vitamin B_6 relation, *Lichstein,* 27
Protocatechuic acid: Glucose carbon incorporation into, *Neurospora, Tatum and Gross,* 797
Metabolism, *Neurospora, Gross, Gafford, and Tatum,* 781
Pteridine: Derivatives, serine metabolism, effect, *Wright,* 873
Purine(s): -Lacking strain, *Aerobacter aerogenes* mutants, purine utilization, *Balis, Brooke, Brown, and Magasanik,* 917
Methyl-. *See* Methylpurine
Utilization, *Aerobacter aerogenes* mutants, purineless, *Balis, Brooke, Brown, and Magasanik,* 917
Purine nucleoside triphosphate(s): Hydrolysis, myosin effect, *Kielley, Kalckar, and Bradley,* 95
Pyridine nucleotide: Synthesis *in vivo, Kaplan, Goldin, Humphreys, Ciotti, and Stolzenbach,* 287
Pyrimidine(s): Introduction into *Escherichia coli* deoxyribonucleic acid, *Zamenhof, Reiner, De Giovanni, and Rich,* 165
Ring, adenine, incorporation into riboflavin isoalloxazine ring, *McNutt,* 365
Pyrimidine nucleoside triphosphate(s): Hydrolysis, myosin effect, *Kielley, Kalckar, and Bradley,* 95
Pyruvate: Metabolism, Furacin effect, *Paul, Bryson, and Harrington,* 463
Pyruvic acid: *p*-Hydroxyphenyl-. *See* Hydroxyphenylpyruvic acid
Phenyl-. *See* Phenylpyruvic acid

R

Rhamnulose: D-, preparation and properties, *Palleroni and Doudoroff,* 957
Rhamnuloside: Glucosyl. *See* Glucosyl rhamnuloside
Riboflavin: Biosynthesis, *Plaut and Broberg,* 131
Hydroxylamine and, reaction, *Dietrich and Harland,* 383
Isoalloxazine ring from adenine pyrimidine ring, *McNutt,* 365
Ribokinase: Liver, purification and properties, *Agranoff and Brady,* 221
Ribonuclease: Oxidation, performic acid effect, *Hirs,* 611
Performic acid-oxidized, peptides, tryptic hydrolysis, *Hirs, Moore, and Stein,* 623
Ribonucleic acid(s): Hydrolysis, enzymatic, kinetics, *Edelhoch and Coleman,* 351
Metabolism, pancreas, x-ray irradiation effect, *Hokin and Hokin,* 85
Yeast, diphosphonucleosides, enzyme relation, *Crestfield and Allen,* 103
Ribonucleic acid. Deoxy-. *See* Deoxyribonucleic acid
Riboside: 5-Amino-4-imidazolecarboxamide. *See* Amino-4-imidazolecarboxamide riboside
Roentgen ray: Irradiation, pancreas protein synthesis and ribonucleic acid metabolism, effect, *Hokin and Hokin,* 85

S

Salmon: Eggs, ichthulokeratin amino acids, *Young and Smith,* 161
Serine: Glycine formation from, polyglutamyl pteridine coenzymes, rôle, *Wright and Stadtman,* 863
Metabolism, polyglutamyl pteridine coenzymes, rôle, *Wright and Stadtman,* 863
Wright, 873

Serine—*continued:*
Metabolism, pteridine derivatives, effect, *Wright*, 873
Spleen: Diphosphopyridine nucleotidase, solubilization and purification, *Alivisatos and Woolley*, 823
Steroid: Hormones, metabolites, excretion, enteric, *Kinsella, Francis, Thayer, and Doisy*, 265
Steroid-3β-ol-dehydrogenase: Adrenal gland, *Beyer and Samuels*, 69
Substrate: Induction, threonine dehydrase, liver, *Sayre, Jensen, and Greenberg*, 111
Succinate: Synthesis from propionate and bicarbonate, liver mitochondrial enzymes, *Lardy and Adler*, 933
Succinic dehydrogenase: Preparation and determination, *Kearney and Singer*, 963
Sulfate: Chondroitin. *See* Chondroitin sulfate
Sulfhydryl compound(s): Phosphorus determination, Lowry-Lopez, effect, *Bruemmer and O'Dell*, 283
Synovial fluid: Proteins, *Schmid, Rosa, and MacNair*, 769
Synthetase: Glutamine. *See* Glutamine synthetase

T

Testis: Hyaluronidase, hyaluronic acid and chondroitin sulfate digestion, transglycosylation, *Hoffman, Meyer, and Linker*, 653
Testosterone: Metabolism, liver, *Axelrod and Miller*, 455
Thienylalanine peptide(s): *Dunn, Ravel, and Shive*, 809
Threonine: Liver, fatty, development, metabolic factors and threonine relation, *Arata, Svenneby, Williams, and Elvehjem*, 327
Threonine dehydrase: Substrate induction, liver, *Sayre, Jensen, and Greenberg*, 111
Thyroxine: Triiodinated analogues, synthesis and biological activity, *Tomita and Lardy*, 595
Tobacco: Methyl group synthesis, glycolic acid utilization, *Byerrum, Dewey, Hamill, and Ball*, 345
Transamination: Enzymatic, mechanisms, *Hilton, Barnes, and Enns*, 833
Transglycosylation: Hyaluronic acid and chondroitin sulfate digestion, testicular hyaluronidase, *Hoffman, Meyer, and Linker*, 653
Transmethylase: Betaine-homocysteine. *See* Betaine-homocysteine transmethylase
Triphosphate: Inorganic, synthesis, muscle adenylate kinase relation, *Lieberman*, 307
Trypsin: Acetyl chymo-. *See* Acetyl chymotrypsin
Inhibitors, pepsin, effect, *Kassell and Laskowski*, 203
Ribonuclease, performic acid-oxidized, peptides, relation, *Hirs, Moore, and Stein*, 623
Tryptophan: Metabolites, urine, *Brown and Price*, 985
Peroxidase-oxidase, liver, *Lee*, 211
Tyrosine: Oxidation system, liver, *La Du and Zannoni*, 273

U

Uridine nucleotide(s): Galactose toxicity, relation, *Hansen, Freedland, and Scott*, 391
Urine: δ-Aminolevulinic acid, determination, *Mauzerall and Granick*, 435
Metabolites, histamine, radioactive, *Karjala, Turnquest, and Schayer*, 9
N-Methyl-2-pyridone-5-carboxylic acid and glycine conjugate, *Lindenblad, Kaihara, and Price*, 893
Porphobilinogen, determination, *Mauzerall and Granick*, 435
Tryptophan metabolites, *Brown and Price*, 985
Uronides: Unsaturated, production, hyaluronidases, bacterial, *Linker, Meyer, and Hoffman*, 13

Uterus: Estradiol-treated, carbon fragments, metabolism, *Mueller and Herranen*, 585

V

Valine: D- and L-, incorporation rates, penicillin biosynthesis, *Stevens, Inamine, and De Long*, 405

Vitamin: B_6, protein synthesis and, *Lichstein*, 27

B_{12}, ascorbic acid solutions, decomposition, copper-promoted, *Rosenberg*, 951

—, liver betaine-homocysteine transmethylase, effect, *Ericson, Harper, Williams, and Elvehjem*, 59

W

Wheat: Leaf phosphatases, *Roberts*, 711

X

Xanthine oxidase: Hydroxylamine effect, *Dietrich and Borries*, 375

Liver, amino acid analogues, effect, *Younathan, Frieden, and Dittmer*, 531

X-ray: *See* Roentgen ray

Y

Yeast: Ribonucleic acid diphosphonucleosides, enzyme relation, *Crestfield and Allen*, 103